

**REMARKS**

Claims 1-2, 6, 11, 14, 18, 27, 29, 34, 38-39, 42-44, 46, 50, 53, 57, and 59 are currently amended. Claims 9-10, 17, 20, 24-25, 32, 37, 41, 54-56, and 58 have been canceled without prejudice. Accordingly, claims 1-8, 11-16, 18-19, 21-23, 26-31, 33-36, 38-40, 42-53, 57, and 59-60 are currently pending.

Applicants respectfully request reconsideration of pending claims based on the following remarks.

**Rejections Under 35 U.S.C. § 103**

Claims 1, 4-8, 18-19, 21-23, 34-36, 41-43, 47-49, 52-54, and 60 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kaminski* et al. (U.S. Patent No. 6,678,512) in view of *Rogers* (U.S. Patent No. 4,404,685) and *Whikehart* et al. (U.S. Patent No. 7,200,377).

In addition, claims 2-3, 9, 14-15, 24, 27, 37, 44-45, 50-51, and 58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kaminski* in view of *Rogers* and *Whikehart*, and further in view of *Phillips* et al. (U.S. Patent No. 5,859,878).

Further, on page 9 of the Office Action the Examiner stated that with respect to claims 46-49, 52, and 57, claims 46-49, and 52 “are rejected based on a rationale similar to the one used to reject claim 43.”

Applicants respectfully traverse all of the foregoing rejections of the claims.

Initially, Applicants note that claim 46 has not been formally rejected by the Examiner under the statute. In addition, Applicants note that no rationale was given for rejecting claim 57 and that claim 57 has also not been formally rejected by the Examiner. Nevertheless, Applicants will address claims 46 and 57 hereafter as these claims include limitations similar to other rejected claims.

Claims 9, 24, 37, and 58 are canceled as the limitations therein are essentially incorporated into amended independent claims 1, 18, 34, and 57, respectively. Thus, the rejection of claims 9, 24, 37, and 58 is now moot. Nevertheless, Applicants will address *Phillips* in discussing the rejections of the other claims.

In addition, claims 41 and 54 are canceled so the rejection of these claims is now moot.

Independent claims 1 and 46 now recite, *inter alia*, a radio receiver in which a front-end circuit comprises “an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band.” Similarly, independent claims 18, 43, and 53 now recite, *inter alia*, a radio receiver comprising a plurality of front-end circuits in which “at least one of said front-end circuits comprises an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band.” In a similar fashion, independent claim 34 now recites, *inter alia*, a method of receiving radio signals that provides a radio receiver comprising one or more front-end circuits in which “at least one of said front-end circuits comprises an intermediate frequency mixing circuit;” and translating an “analog signal to an intermediate frequency band.” Independent claim 57 now recites limitations similar to these limitations in claim 34. Support for the foregoing limitations can be found in the application and claims as filed.

There is no teaching or suggestion in the cited references of all the limitations now recited in independent claims 1, 18, 34, 43, 46, 53, and 57. In particular, there is no teaching or suggestion of “an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band” as recited in claims 1, 18, 43, 46, and 53. There is also no teaching or suggestion of “an intermediate frequency mixing circuit” and translating an “analog signal to an intermediate frequency band” as recited in claims 34 and 57.

As the Examiner points out on page 10 of the Office Action (with respect to claims 9, 24, 37, and 58), neither *Kaminski* nor *Whikehart* or *Rogers* expressly teach that a front-end circuit comprises “an intermediate frequency mixing circuit” operable to translate the received radio signals to an intermediate frequency band.

In contrast, *Kaminski* teaches that its receiver “does not require frequency conversion stage(s) prior to analog to digital conversion.” Col. 2, lines 50-52. Also, *Whikehart* discloses a receiver constructed so that “there is no need for an intermediate

frequency, eliminating the need for multiple local oscillators and their associated mixing hardware.” Col. 4, lines 33-36. Thus, *Kaminski* and *Whikehart* effectively teach away from employing “an intermediate frequency mixing circuit” as recited in claims 1, 18, 34, 43, and 53. As such, there would have been no technological motivation to modify the teachings of *Kaminski* and *Whikehart* to include an intermediate frequency translator such as disclosed in *Phillips*.

Consequently, claims 1, 18, 34, 43, 46, 53, and 57 would not have been obvious over the cited references.

Since claims 4-8 and 60 depend from claim 1, these dependent claims include the limitations of claim 1. Since claims 19 and 21-23 depend from claim 18, these dependent claims include the limitations of claim 18. Since claims 35, 36, and 42 depend from claim 34, these dependent claims include the limitations of claim 34. Since claims 47-49 and 52 depend from claim 46, these dependent claims include the limitations of claim 46.

As a result, the foregoing dependent claims would also not have been obvious over the cited references for at least the reasons discussed with respect to their respective base independent claims.

Applicants therefore respectfully request that the rejection of claims 1, 4-8, 18-19, 21-23, 34-36, 41-43, 47-49, 52-54, and 60 under 35 U.S.C. § 103(a) be withdrawn.

In addition, claims 2-3 and 14-15 depend from claim 1 and thus include the limitations of claim 1. Claim 27 depends from claim 18 and thus includes the limitations of claim 18. Claims 44-45 depend from claim 43 and thus include the limitations of claim 43. Claims 50-51 depend from claim 46 and thus include the limitations of claim 46. As a result, these foregoing dependent claims would not have been obvious over the cited references for at least the reasons discussed with respect to their respective base independent claims.

Applicants thus respectfully request that the rejection of claims 2-3, 9, 14-15, 24, 27, 37, 44-45, 50-51, and 58 under 35 U.S.C. § 103(a) be withdrawn.

Claims 11-13 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kaminski* in view of *Rogers* and *Whikehart*, and further in view of *Bugeja* et al. (U.S. Publication No. 2002/0177446). Applicants respectfully traverse.

Claims 11-13 depend from claim 1 and thus include the limitations of claim 1. Claim 26 depends from claim 18 and thus includes the limitations of claim 18.

As discussed above for claims 1 and 18, there is no teaching or suggestion in *Kaminski*, *Whikehart*, or *Rogers* that a front-end circuit comprises “an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band.” Likewise, there is no teaching or suggestion in *Bugeja* of these recited features.

Thus, even if the teachings of *Kaminski*, *Rogers*, *Whikehart*, and *Bugeja* are combined as proposed by the Examiner, not all the limitations of claims 11-13 and 26 are met. Hence, these claims would not have been obvious over the cited references for at least the reasons stated above with respect to claims 1 and 18.

Applicants therefore respectfully request that the rejection of claims 11-13 and 26 under 35 U.S.C. § 103(a) be withdrawn.

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kaminski*, in view of *Rogers* and *Whikehart*, and further in view of *Bugeja*. Applicants respectfully traverse.

Claim 16 depends from claim 1 and thus includes the limitations of claim 1. As discussed above for claim 1, there is no teaching or suggestion in *Kaminski*, *Rogers*, or *Whikehart* that a front-end circuit comprises “an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band.” Likewise, there is no teaching or suggestion in *Bugeja* of this recited feature.

Thus, even if the teachings of *Kaminski*, *Rogers*, *Whikehart*, and *Bugeja* are combined as proposed by the Examiner, not all the limitations of claim 16 are met. Hence, claim 16 would not have been obvious over these cited references for at least the reasons stated above with respect to claim 1.

Applicants therefore respectfully request that the rejection of claim 16 under 35 U.S.C. § 103(a) be withdrawn.

Claims 38-40 and 59 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kaminski* in view of *Rogers*, *Whitehart*, and *Bugeja*, and further in view of *Phillips*. Applicants respectfully traverse.

Claims 38-40 depend from claim 34 and thus include the limitations of claim 34. Claim 59 depends from claim 57 and thus includes the limitations of claim 57.

As discussed above for claims 34 and 57, there is no teaching or suggestion in *Kaminski*, *Rogers*, or *Whitehart* of “an intermediate frequency mixing circuit” and translating an “analog signal to an intermediate frequency band” as recited in claims 34 and 57. Likewise, there is no teaching or suggestion in *Bugeja* of these recited features.

*Phillips* was cited for disclosing software configurable decoding parameters.

As discussed above, there would have been no motivation to add the teachings of *Phillips* related to using an intermediate frequency mixing circuit to the combination of the teachings of *Kaminski*, *Rogers*, or *Whitehart*, since *Kaminski* and *Whitehart* both teach away from employing “an intermediate frequency mixing circuit” in their disclosed receivers. Thus, even if the teaching of *Phillips* related to software configurable decoding parameters is added to the teachings of *Kaminski*, *Rogers*, *Whitehart*, and *Bugeja* as proposed by the Examiner, not all the limitations of claims 38-40 and 59 are met. Hence, these claims would not have been obvious over the cited references for at least the foregoing reasons.

Applicants therefore respectfully request that the rejection of claims 38-40 and 59 under 35 U.S.C. § 103(a) be withdrawn.

Claims 18-19, 21-23, 27, 29-31, and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kelley* (U.S. Patent No. 5,870,402) in view of *Rogers*. In addition, claim 32 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kelley* in view of *Rogers*, and further in view of *Phillips*. Applicants respectfully traverse.

Claim 32 is currently canceled as the limitations therein are incorporated into amended claim 29. Thus, the rejection of claim 32 is now moot. Nevertheless, Applicants will address *Phillips* in discussing the remaining claim rejections.

As discussed previously, independent claim 18 now recites, *inter alia*, a radio receiver comprising a plurality of front-end circuits in which “at least one of said front-end circuits comprises an intermediate frequency mixing circuit operable to translate the received radio signals to an intermediate frequency band.” Independent claim 29 now recites these same features. There is no teaching or suggestion in *Kelley* or *Rogers* of this limitation recited in claims 18 and 29.

Thus, even if the teachings of *Kelley* and *Rogers* are combined as proposed by the Examiner, not all the limitations of claim 18 and 29 are met. Hence, claims 18 and 29 would not have been obvious over these cited references.

In addition, there would have been no motivation to add the teachings of *Phillips* related to using an intermediate frequency translator in the combination of the teachings of *Kelley* and *Rogers*. *Kelley* discloses that a prior art receiver utilizing intermediate frequency sampling is less desirable as “it processes only one received signal at a time and, therefore, multiple IF sampled digital receivers would be necessary to process multiple signals.” Col. 2, lines 6-14. Thus, *Kelley* effectively teaches away from employing “an intermediate frequency mixing circuit” as recited in claims 18 and 29.

Consequently, claims 18 and 29 would not have been obvious over the cited references.

Since claims 19, 21-23, and 27 depend from claim 18, these dependent claims include the limitations of claim 18. Since claims 30, 31, and 33 depend from claim 29, these dependent claims include the limitations of claim 29. As a result, the foregoing dependent claims would also not have been obvious over the cited references for at least the reasons discussed with respect to claims 18 and 29.

Applicants therefore respectfully request that the rejection of claims 18-19, 21-23, 27, 29-31, and 33 over *Kelley* in view of *Rogers* under 35 U.S.C. § 103(a) be withdrawn.

Claims 24 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kelley* in view of *Rogers*, and further in view of *Phillips*. Applicants respectfully traverse.

As claim 24 is canceled, the rejection of claim 24 is now moot.

Since claim 27 depends from claim 18, claim 27 includes the limitations of claim 18. As discussed above, there is no teaching or suggestion in *Kelley* or *Rogers* of all the limitations recited in claim 18. In addition, there would have been no motivation to add the teachings of *Phillips* related to using an intermediate frequency to the combination of the teachings of *Kelley* and *Rogers*, as *Kelley* effectively teaches away from employing “an intermediate frequency mixing circuit” as recited in claim 18.

Even if the teaching of *Phillips* related to software configurable decoding parameters is added to the teachings of *Kelley* and *Rogers* as suggested by the Examiner with respect to claim 27, not all the limitations of claim 27 are met. As a result, claim 27 would not have been obvious over the cited references.

Applicants therefore respectfully request that the rejection of claims 24 and 27 under 35 U.S.C. § 103(a) be withdrawn.

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kelley* in view of *Rogers*, and further in view of *Kelley* et al. (U.S. Patent No. 5,280,636). Applicants respectfully traverse.

Since claim 28 depends from claim 18, claim 28 includes the limitations of claim 18. As discussed above, there is no teaching or suggestion in *Kelley* or *Rogers* of all the limitations recited in claim 18. The addition of *Kelley* ‘636 does not overcome the deficiencies of *Kelley* and *Rogers*.

In addition, there is no teaching or suggestion in any of these references of a plurality of front-end circuit groups and a “*plurality of corresponding analog to digital converters*, wherein said digital processing system is operable to receive a plurality of digital signals from said *analog to digital converters*” as recited in claim 28. (Emphasis added). In contrast, *Kelley* ‘636 discloses only one ADC 38 in its receiver. (See Fig. 1).

Accordingly, for the foregoing reasons, claim 28 would not have been obvious over the cited references.

Applicants therefore respectfully request that the rejection of claim 28 under 35 U.S.C. § 103(a) be withdrawn.

### **CONCLUSION**

Applicants respectfully submit that the currently pending claims are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at the telephone number listed below.

Respectfully submitted,

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